WHAT IS CLAIMED IS:

1. A system for communicating signals from subscribers to a basestation, the system comprising a first antenna and one or more additional antennas; and each antenna is comprised of two or more antenna elements spaced apart in a vertical direction from one another, wherein the antenna element may be of any antenna technology suitable for communicating the signals, including but not limited to omnidirectional antennas, dipoles, slotted antennas, horns and arrays.

2. The system of Claim 1, wherein the spacing and phasing among the antenna elements of each antenna are selected to create a radiation pattern that produces a signal reduction at a distance where interferers are expected to operate.

3. The system of Claim 1 wherein each antenna is constructed with different antenna element spacings and/or phases to produce a radiation pattern for signals within the desired area of coverage that is unique from the other antennas of the system of Claim 1, while simultaneously producing the signal reduction for interfering signals addressed in Claim 2.

4. The system of Claim 1, wherein the RF signal from each antenna is analyzed separately for each subscriber and chosen for reception.

5. The method of Claim 4 wherein the signal quality of RF signal from each antenna pattern is measured for each subscriber based on signal level and/or signal to interference level (i.e., C/I.)

6. The method of Claim 4 wherein the RF signal from the antenna pattern with the best signal quality for each subscriber as determined in by the method of Claim 5 is selected and routed to a basestation receiver. Selection and routing may be via switch selection or by using commonly employed diversity signal combining methods such as Maximal Ratio Combining.

7. A system for communicating signals from subscribers to a basestation, the system comprising a first antenna and one or more additional antennas; and each antenna is comprised of two or more antenna elements spaced apart in a vertical direction from one another, wherein the antenna element may be of any antenna technology suitable for communicating the signals, including but not limited to omnidirectional antennas, dipoles, slotted antennas, horns and arrays.

8. The system of Claim 7, wherein the spacing and phasing among the antenna elements of each antenna are selected to create a radiation pattern that produces a signal reduction at a distance where interferers are expected to operate.

9. The system of Claim 7, wherein each antenna is constructed with different antenna element spacings and/or phases to produce a radiation pattern for signals within the desired area of coverage that is unique from the other antennas of the system of Claim 7, while simultaneously producing the signal reduction for interfering signals addressed in Claim 8.

10. The system of Claim 7, wherein the RF signal from each antenna is routed to the basestation to be analyzed separately for each subscriber and chosen for reception as determined by methods included in the basestation design.

11. A system for communicating signals between a basestation and subscribers, the system comprising a first antenna and one or more additional antennas; and each antenna is comprised of two or more antenna elements spaced apart in a vertical direction from one another, wherein the antenna element may be of any antenna technology suitable for communicating the signals, including but not limited to omnidirectional antennas, dipoles, slotted antennas, horns and arrays.

12. The system of Claim 11, wherein the spacing and phasing among the antenna elements of each antenna are selected to create

a radiation pattern that produces a signal reduction at a distance where interferers are expected to operate.

13. The system of Claim 11 wherein each antenna is constructed with different antenna element spacings and/or phases to produce a radiation pattern for signals within the desired area of coverage that is unique from the other antennas of the system of Claim 11, while simultaneously producing the signal reduction for interfering signals addressed in Claim 12.

14. The system of Claim 11, wherein the RF signal from each antenna is analyzed separately for each subscriber and chosen for reception.

15. The method of Claim 14 wherein the signal quality of RF signal from each antenna pattern is measured for each subscriber based on signal level and/or signal to interference level (i.e., C/I.)

16. The method of Claim 14 wherein the RF signal from the antenna pattern with the best signal quality for each subscriber as determined by the method of Claim 15 is selected and routed to a basestation receiver. Selection and routing may be via switch selection or by using commonly employed diversity signal combining methods such as Maximal Ratio Combining.

17. The system of Claim 11, wherein the antenna selected during the conduct of the method of Claim 16 for communications from each subscriber to the basestation is also selected for communicating from the basestation to each subscriber.